DRBC 106 2020 Task Table

EPA Received: 08/22/2019

Comments Round 1 Sent to DRBC: 09/19/2019

1. **PCBS – Ongoing PMP Management**
    a. No Comment
2. **Boat Run Monitoring Program**
    a. Does the boat run end in October or continue into December? The boat run will end for the 2020 season in October. The shift to year-round was a temporary adjustment to assist with calibration of the eutrophication model. Since the model calibration period will be completed by October 2020, we do not need to continue year-round monitoring. The description is correct as written.
3. **Expanded Nutrient Monitoring – Delaware at Trenton and Schuylkill at Philadelphia**
    a. The pre-canned query will be helpful to non WQX users Acknowledged
4. **Nutrient Monitoring in Tribal Tributaries to the Delaware Estuary**
    a. The pre-canned query will be helpful to non WQX users Acknowledged
5. **Water Column Integrative PCB Samplers**
    a. This will need a QAPP Acknowledged. We will develop and submit a QAPP for EPA approval.
    b. VADEQ uses passive samplers as a surrogate for fish tissue results and may be a resource to DRBC. Acknowledged. We appreciate the recommendation.
6. **Estuary Eutrophication Model Development**
    a. Please consider EPA's comments on the nutrient criteria plan pertaining to the Estuary Eutrophication Model
    b. Please be more specific on what developments were conducted and will be conducted with respect to the timeline for the model

        i. Model developments include but not limited to
            1. Evaluation and enhancement of model code on an as needed basis to improve model stability
            2. Finalization of the model grid to optimize simulation time steps and to maximize the numerical stability
            3. Preparation of the hydrodynamic model input file: assignment of forcing tides; water temperature; salinity for open boundaries; assignment of tributary inflows; point and nonpoint source inflows for upstream boundaries; assignment of metrological conditions
            4. QA/QC on the linkage file between hydrodynamic and water quality models; optimize the linkage temporal scale
            5. Preparation of WQ model input file for concentrations or loads from point and nonpoint sources for each state variable
            6. Data compilation and management of model calibration targets

7. Development of post processor for the model output and observed data comparison
8. Calibration of kinetics and processes to customize the mode fit to the Delaware Estuary.

c. EPA recommends that DRBC also provide a technical report/memo documenting the progress and status of model development in Nov 2020 when slides are presented

   i. A technical report will be generated describing details of model development, after the model is fully calibrated. The timing of having the fully calibrated model is likely beyond Nov 2020. It would be an inefficient use of limited resources to write a report/memo based on an incomplete model.

d. Please be more specific on what and how each calibration run and exercise was and will be carried out in each time line for model

   i. Both hydrodynamic and water quality model will be calibrated/validated for the two-year period for 2018-2019.
   ii. Hydrodynamic model calibration will be performed through adjustment of bottom roughness height and turbulent scheme. The key metrics of the hydrodynamic model calibration are water surface elevation; current velocity; water temperature; and salinity
   iii. Water quality model calibration will be performed through the guidance from the model expert panel and modeling consultants. Model predicted state variables (i.e., dissolved oxygen, nitrogen species, phosphorus species, phytoplankton, etc.) will be compared with the available observed data. Tens of model input parameters, kinetic coefficients and constants will be adjusted based on the current science to achieve the final calibration results. The model calibration processes are iterative processes which requires tens to hundreds of simulations.

7. **Spectral Analyzers for Nitrate**
   a. Please describe how this data will be incorporated into the Delaware Estuary Eutrophication Model Nitrate is an important state variable in the eutrophication model. Continuous nitrate data at Trenton will provide a high-resolution boundary condition. Continuous nitrate data at Chester will be used for comparison to model prediction for calibration and verification.
8. **2020 Water Quality Assessment Report**
   a. Please remove Katherine Bentley name from this section The task table will be amended as requested.
   b. EPA would like to know if the Basin States are also given the opportunity to comment The Basin States will be given the opportunity to comment

9. **Delaware Estuary enhanced light extinction data**
    a. Please include an estimated timeline for developing this model? Please describe how this light extinction regression model will be used in support of the estuary eutrophication model? All light extinction data will be collected by September 30, 2020. The model expert panel identified multiple options for incorporation of light extinction information into the eutrophication model including default internal WASP algorithms and several formats of external specification following published literature. By December 2020, we expect the model expert panel to select and recommend the best method for describing light extinction as part of the eutrophication modeling process.
10. **Stage 2 PCB TMDLs**
    a. No Comment
11. **Delaware River Biological Monitoring**
    a. Has DRBC considered using the PA SWIMMI method to allow making aquatic life use assessment decisions based on macroinvertebrate community health for the non-tidal Delaware? The DRBC macroinvertebrate biotic index has been draft since 2009 and DRBC assessment recommendations for the non-tidal Delaware would be valuable for PA, NY and NJ. Note that SWIMMI index period may differ from DRBC planned sampling.

DRBC is in the process of reviewing its biological monitoring methodology. One modification we are considering is adopting the PA SWIMMI method. In 2018, the Academy of Natural Sciences performed a review of our biological monitoring program and concluded that minor modifications could be made to the DRBC methodology to make the DRBC data compatible with the SWMMI index. We plan to have a subgroup of our Water Quality Advisory Committee review the Academy report and endorse any potential changes.

12. **Enhanced Bacterial Transects, Zone 3 and 4**
    a. Are there plans to target wet vs dry weather to evaluate possible near shore CSO impacts? Wet versus dry periods were effectively monitored during the 2019 monitoring. The goal of the 2020 monitoring approach is to assess whether near-shore bacterial concentrations are higher than mid-channel concentrations during the same conditions.
13. **Management – Grant and infrastructure management**
    a. EPA appreciates DRBCs timeliness and effective communication
    b. EPA is waiting on response to EPA's submitted mid-year comments for the 2019 106 grant sent on 8/21 Acknowledged
    c. EPA is waiting on updated QAPP for DRBC Eutrophication model sent on 8/20 Acknowledged
    d. EPA will need a ~60 day review period for any new QAPP prior to work beginning (PCB Samplers) Acknowledged